

THE GENERA *OPHIDIUS* CANDÈZE AND *YALGANUS* GEN. NOV.
(ELATERIDAE: COLEOPTERA)

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Abstract

The genus *Ophidius* Candèze is redefined and *O. vericulatus* sp. n. described. A key to the four included species (*dracunculus* Candèze, *elegans* Candèze, *histrion* (Boisduval) and *vericulatus* sp. n.) is provided. A new genus *Yalganus* is erected to include *serricornis* (Candèze) transferred from *Ophidius*, and *hirticornis* (Carter) transferred from *Dictenophorus* Candèze.

Introduction

Candèze (1863) erected the genus *Ophidius* to contain three species, two of which (*elegans* and *dracunculus*) he described as new, and the third, *histrion* (Boisduval, 1835) transferred from genus *Elater* Linne. These three species formed a closely related group to which three further species were added during later years—*brevicornis* Macleay (1872), *serricornis* Candèze (1878), and *macleayi* Candèze (1895).

The genus *Ophidius* is characterized by the vertically raised scutellum, all legs with four distinctly padded tarsi, distinct genital structures in both sexes, and the absence of the frontal carina on the head. The combination of the above features are not present in the three latter species which are now excluded from the genus.

Detailed locality and collecting data are given for the new species only. The collections from which specimens were examined are listed below, together with abbreviations used in the text.

- AM—Australian Museum, Sydney.
- ANIC—Australian National Insect Collection, Canberra.
- BM—British Museum (Natural History), London.
- CAS—California Academy of Sciences, San Francisco.
- DANSW—Department of Agriculture, N.S.W., Sydney.
- DEI—Deutsches Entomologisches Institut, Berlin.
- HU—Humboldt University, Berlin.

- IRScNB—Institut Royal des Sciences Naturelles de Belgique, Brussels.
- JGB—Private collection of Mr J. G. Brooks, Cairns.
- MACL—Macleay Museum, Sydney.
- MF—Museum G. Frey, München.
- NMV—National Museum of Victoria, Melbourne.
- NRS—Naturhistoriska Riksmuseet, Stockholm.
- QM—Queensland Museum, Brisbane.
- QU—Queensland University, Brisbane.
- SAM—South Australian Museum, Adelaide.

Genus OPHIDIUS Candèze

Ophidius Candèze, 1863: 203; Candèze, 1891: 180; Schwarz, 1907: 235, 238; Neboiss, 1956: 55.
Type species: *Ophidius elegans* Candèze (designated by Hyslop, 1921).

The length of specimens in the genus range from 12 to 25 mm. They are rather brightly and conspicuously coloured with orange-brown and black patterns. The distribution of the genus is restricted to the eastern New South Wales and Queensland.

Generic diagnosis: Head convex with more or less distinct, somewhat triangular median depression; anterior carina absent, mandibles robust, bluntly bicuspid; maxillary palp with terminal segment hatchet shaped, antennae short, barely reaching back to the posterior angles of the prothorax, seg. 1 large, robust, slightly curved; seg. 2 very short, rounded; seg. 3 similar to seg. 2, but slightly more elongated; seg. 4-10 elongately triangular, laterally flattened, becoming shorter distally; terminal segment slightly recessed near apex.

Pronotum as wide as the elytra, covered with

fine pubescence; lateral carina entire, although occasionally inconspicuous anteriorly; posterior angles short, divergent, pointed apically; dorsal carina very close and parallel to the lateral carina. Scutellum appears as a vertical column with flat or slightly dome-shaped top.

Prosternal suture straight, slightly excavated anteriorly. Posterior margin of mesosternal groove high, abruptly depressed anteriorly. Legs short, tarsal segments 1-4 becoming shorter distally, with distinct rounded pads.

Key to species of genus *Ophidius*

1. — Elytra concolorous 2
- Elytra with black and orange-brown pattern 3
2. — Apex of elytra rounded (Fig. 10) *elegans*
- Apex of elytra terminates in acute bifid point (Fig. 11) *vericulatus*
3. — Elytra with pattern in form of lines *histrion*
- Elytra with pattern in form of spots *dracunculus*

Ophidius elegans Candèze

Figs. 1, 4, 5, 10, 17. Plate 3, fig. 1.

Ophidius elegans Candèze, 1863: 204; Candèze, 1895: 51; Neboiss, 1956: 55.

The original description is based on specimens from the Bakewell collection and includes both sexes. According to the available information this collection was passed on to Fleutiaux, whose collection is now in the Museum d'Histoire Naturelle, Paris. It is not known to the present author if there are any specimens of *elegans* in that institution and whether the type is among them. Three specimens (♂ and 2 ♀) in the IRScNB collection, Brussels are each labelled "Victoria" and a printed label "Type". The description of the female states that the abdomen is entirely black, this is not so with the two females and their status as 'syntypes' is doubtful.

The type locality "Victoria" is somewhat misleading; the southernmost specimens have been recorded from Monaroo, in Southern New South Wales, but none from Victoria. It is likely that the locality refers to Mt. Victoria in the Blue Mountains, which would fit well within the range of distribution.

Head, antennae, median line of pronotum, posterior angles as well as scutellum, legs and most of the underside of the body black, other parts orange-brown. Median depression of the head slight to moderate, not sharply defined, somewhat triangular.

Antennae serrate, pronotum evenly elevated, with moderately dense punctation. The top of scutellum almost flat or slightly depressed in the middle, punctate, edges rounded. Elytra gradually curved, apices conjointly rounded.

Aedeagus with lateral lobes slender, apical hooks elongate, median lobe gradually tapering. In female the base of bursa copulatrix densely covered with long chitinous spines, basal enlarged section of accessory gland with two groups of short stout spines.

Length 16-23 mm, width 4-6 mm.

Type location: Unknown (probably Paris Museum); 1 ♂ 2 ♀ syntypes (?) IRScNB.

Type locality: "Victoria" (?) see comments above.

Specimens examined: (28) New South Wales—Monaroo, Nowra (Jan.), Appin (Dec.), Sydney, Ropes Creek, National Park (Jan.), Galston, Wahroonga, Yanderra (Dec.), Queensland—Stanthorpe (Jan.). (ANIC; CAS; HU; IRScNB; JGB; NMV; QM; SAM).

Distribution: New South Wales, Sth. Queensland.

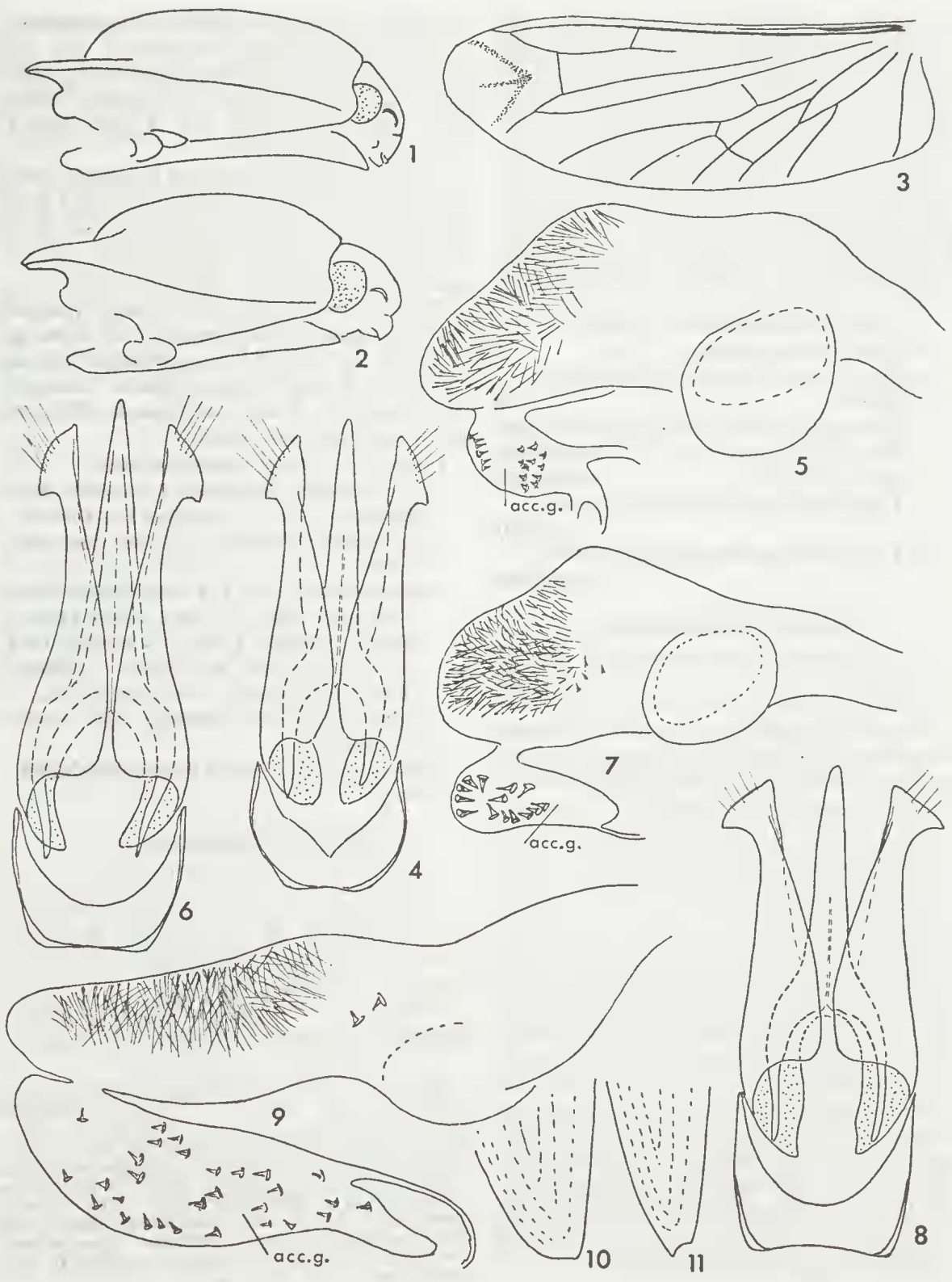
Ophidius vericulatus sp. n.

Figs. 6, 7, 11. Plate 3, fig. 2.

This species resembles *elegans*, but it is easily separated by the apically bi-pointed elytra, and wider black median line on pronotum.

Head black with shallow triangular central depression; antennae serrate but segments

Figs. 1-11. 1.—*Ophidius elegans* Cand. head and prothorax lateral view; 2.—*Yalganus serricornis* (Cand.) head and prothorax lateral view; 3.—*Ophidius histrion* (Boisd.) wing venation; 4.—*Ophidius elegans* Cand. aedeagus; 5.—bursa copulatrix (acc. g.—basal section of accessory gland); 6.—*Ophidius vericulatus* sp. n. aedeagus (holotype ♂); 7.—bursa copulatrix (allotype ♀); 8.—*Ophidius dracunculus* Cand. aedeagus; 9.—bursa copulatrix; 10.—*Ophidius elegans* Cand. apex of elytra; 11.—*Ophidius vericulatus* sp. n. apex of elytra.



somewhat more slender than in *elegans*. Pronotum evenly rounded, densely punctate and covered with dense orange pubescence; the black median line wider and more pronounced than in *elegans*; posterior angles black. Scutellum raised to an almost cordiform platform, with transverse depression near the posterior edge. Elytra orange-brown, bi-pointed apically, the median point being shorter.

Aedeagus slender, apical hooks of lateral lobes with distal margin evenly curved; the female bursa copulatrix with a dense group of long chitinous spines at the base and short triangular spines in accessory gland.

Length 17-24 mm; width 4.5-6.5 mm.

Type material: Holotype ♂ (T-4573) Eubenangee, N. Qld., Jan. 1950, C. Oke (NMV); allotype ♀ (T-4574) Kuranda, N. Qld., Feb. 1953, J. G. Brooks (ex F. E. Wilson Coll. NMV). 2 paratypes (T-4575-T-4576) Kuranda, N. Qld., Feb. 1951 and Jan. 1952, J. G. Brooks (ex F. E. Wilson Coll. and E. T. Smith Coll. NMV); 1 ♀ paratype Mt. Molloy, N. Qld. 7-10 Jan. 1962, H. Demarz (MF); 2 ♂ paratypes Cairns distr., N. Qld. F. P. Dodd (SAM); 1 ♂ paratype (T-4577) Cairns, N. Qld. Mar. 1902 (NMV); 7 ♂ paratypes Kuranda, N. Qld. G. E. Bryant, Nov. 1909 (BM); 2 paratypes Kuranda, Jan. 1950, J. G. Brooks (JGB).

Distribution: North Queensland.

Ophidius dracunculus Candèze

Figs. 8, 9. Plate 3, fig. 3.

Ophidius dracunculus Candèze, 1863: 205; Neboiss, 1956: 55.

This species is easily recognized by its characteristic colour pattern of four pairs of yellowish-brown spots on elytra; it could not be mistaken for any other Australian species.

Head black with distinct triangular depression, in the centre of which is a slightly elevated ridge. Antennae serrate, individual segments slender. The surface of pronotum uneven, coarsely punctate, slight longitudinal depression on either side of the broad elevated middle rise, colour black with yellowish-brown margins.

Scutellum black, vertically elevated with dome-shaped apex, coarsely punctate. Elytra

gradually curved to conjointly rounded apices. Legs short, dark brown to black.

In aedeagus the lateral lobes with apical hooks short, triangular. The female genitalia with basal part of the accessory gland very large, irregularly covered with short and broad spines; bursa copulatrix with a group of long chitinous spines and pair of short ones more distally, the enlarged basal section of accessory gland with stout irregularly situated spines.

Length 13-21 mm; width 3-5 mm.

Type location: BM. The species has been described from specimens in the Chevrolat, Schaum and Guérin-Meneville collections, most of which through various channels were deposited in the Museum d'Histoire Naturelle, Paris, British Museum (Natural History), London and the Institut Royal des Sciences Naturelles de Belgique, Brussels respectively. A specimen from the British Museum, London with the labels "Janson Coll. ex Candèze" and a pink-edged label "*Ophidius dracunculus* Cdze. Austr. septent." in Candèze's handwriting has been examined and is here selected as Lectotype. Three specimens in IRScNB labelled "Types" with locality label "Australie" could only be regarded as paratypes.

Type locality: "Australie septentrionale".

Specimens examined: (72) New South Wales—Gosford, Wollongong, Sydney, Wentworth Falls, Wahroonga (Dec.), Illawarra (Jan.), Blackheath (Jan.), Blue Mountains; Otford (Dec.), Rosebank (Jan.), Mittagong (Jan.), Roseville (Nov.), Hazelbrook (Dec.), Rivertree, Woronora Dam (Dec.). Queensland: Mt. Tambourne (Dec.), National Park, Eukey (Jan.).

(ANIC; BM; CAS; DANSW; HU; NMV; MACL; QM; QU; SAM).

Distribution: New South Wales, Queensland.

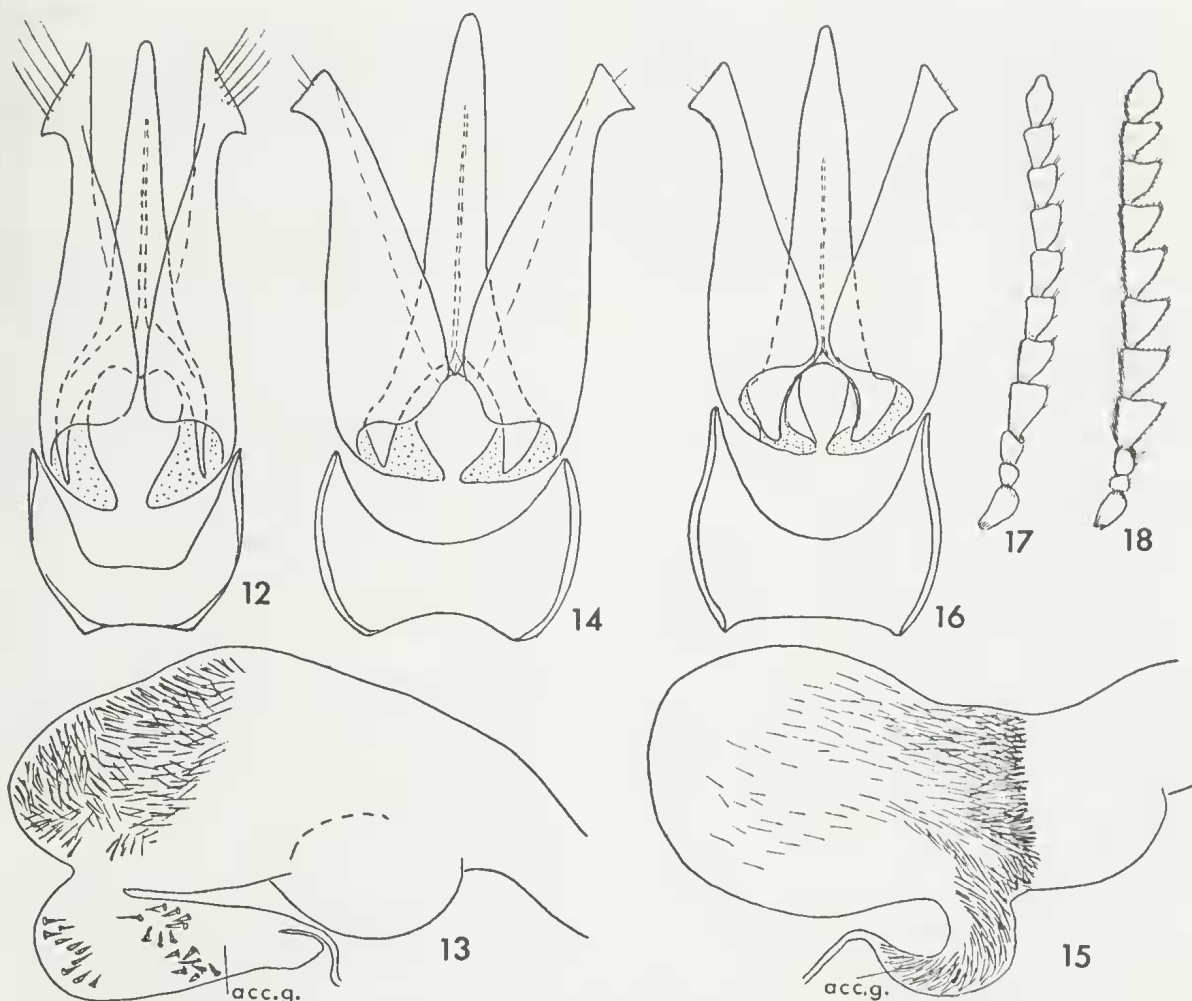
Ophidius histrio (Boisduval)

Figs. 3, 12, 13. Plate 3, fig. 4.

Elater histrio Boisduval, 1835: 105.

Ophidius histrio, Candèze, 1863: 204; Neboiss, 1956: 55.

This species with distinct black and orange-



Figs. 12-18. 12.—*Ophidius histrio* (Boisd.) aedeagus; 13.—bursa copulatrix; 14.—*Yalганus serricornis* (Cand.) aedeagus; 15.—bursa copulatrix; 16.—*Yalганus hirticornis* (Carter) aedeagus; 17.—*Ophidius elegans* Cand. antenna; 18.—*Yalганus serricornis* (Cand.) antenna.

brown curved line pattern does not create any problems with identification.

Head black, with central triangular depression, antennae serrate, almost black with exception of the first few segments which show reddish tinge.

Pronotum broad, evenly rounded, usually with three black longitudinal lines; posterior angles blackish. Scutellum raised vertically, apex in form of an elevated platform with sharply defined margin, the posterior section straight and elevated.

Elytra with distinct blackish curved line pattern on yellowish brown background. In aedeagus the lateral lobes slender with apical hooks somewhat elongate triangular. In female the base of bursa copulatrix densely covered with a group of chitinous spines; the enlarged basal section of accessory gland with two groups of short stout spines.

Length 15-22 mm; width 4-6 mm.

Type location: unknown, described from specimens in Dejean and Dupont collections.

Type locality: "New Holland".

Specimens examined: (93) New South Wales: Sydney, Kurrajong, Illawarra (Jan.), National Park (Dec.), Gosford, Rosebank (Jan.), Gordon (Dec.), Otford,

Acacia Plateau, Comboyne, Ulong (Nov.), Richmond River (Nov.), Dorrigo, Lismore (Dec.), Kew (Jan.), Kangaroo Valley (Jan.), Rivertree, Batemans Bay. Queensland: Mt. Tambourine (Nov.), Springbrook, National Park (Jan.), Stanthorpe (Dec., Jan.), Brisbane, Southport (Jan.), Glen Lamington, Montville (Feb.), Bunya Mtns. (Feb.), Mt. Spec (Jan.).

(ANIC, CAS, DANSW, DEI, HU, JGB, MACL, NMV, QM, SAM).

Distribution: New South Wales, Queensland.

Genus YALGANUS gen. n.

Type species: *Ophidius serricornis* Candèze (present designation).

This genus has been erected to include two species, one of which—*serricornis* is transferred from the genus *Ophidius*, the other—*hirticornis* from the genus *Dicteniophorus*. This genus is rather similar to *Ophidius*, to which it may be closely related, but lacks the tarsal pads, and has the dorsal carina diverging from lateral carina in the pronotum (Fig. 2). The vertically raised scutellum separates it from the genus *Dicteniophorus*.

Generic diagnosis:

Head convex, without or with only slight central depression; frontal carina distinct at sides above the antennae, but incomplete at the centre; mandibles robust, bluntly bicuspid at apex; maxillary palp with terminal segment hatchet shaped. Antennae short, barely reaching posterior angles of pronotum, covered with short, stiff, bristle-like hairs; seg. 1 large, robust, somewhat bulbous; seg. 2 very short, rounded; seg. 3 slightly longer than seg. 2; segs. 4-10 short, triangular, laterally flattened, terminal segment more or less elongate with lateral incision near apex.

Pronotum short, widening posteriorly, with only slight indication of median line, surface covered with short, stiff, bristle-like hairs; posterior angles short, dorsal carina short, diverging from lateral margin.

Scutellum raised similarly to that in *Ophidius*, but the apex not distinctly flattened; surface punctate. Elytra gradually curved, covered with short, bristle-like hairs. Meso-

sternum with highly raised posterior margin and low flattened anterior section.

Legs moderately short, tarsal segments 1-4 becoming shorter distally, not widened, with dense yellowish pubescence beneath, but without pads.

Key to species of the genus *Yalganus*.

1. Pronotum with black ovoid central marking (S. Qld. and NSW) *serricornis*
- Pronotum concolorous orange-brown (N. Qld.) *hirticornis*

The generic name is derived from the word "yalgan" meaning "sun" and used by the Australian aboriginal tribes which lived in Tweed River area of New South Wales.

Yalganus serricornis (Candèze) Comb. nov.

Figs. 2, 14, 15, 18. Plate 3, fig. 5.

Ophidius serricornis Candèze, 1878: 171, Neboiss, 1956: 55.

The species is distinguished by its characteristic colouring. The antennae, head, a central oval marking and the posterior margin of the pronotum, scutellum, legs and the underside of the body all black, sides of pronotum and the elytra orange-brown.

The antennae are short, serrate, segments 4-10 short, triangular, laterally flattened; head with faint central depression; scutellum raised vertically, apex truncate. Pronotum and elytra densely covered with short bristle-like hairs, the latter rounded apically, sutural carina ending bluntly.

In the aedeagus lateral lobes stout, broad at base, terminating with small triangularly shaped apical hook. In female genitalia the bursa copulatrix with an encircling band of long chitinous spines, gradually decreasing in density towards the base; the enlarged basal section of accessory gland densely covered with similar spines.

Length 14-18 mm; width 4-6 mm.

Type location: IRScNB.

Type locality: Sydney.

Specimens examined: (6) New South Wales:

Ropes Creek, East Hills.

Queensland: Brisbane, Eungella (Jan.),

Rockhampton (Dec.).

(ANIC, IRScNB, JGB, NMV, QU).

Distribution: New South Wales, Queensland.

Yalganus hirticornis (Carter) comb. nov.

Fig. 16. Plate 3, fig. 6.

Dicteniophorus hirticornis Carter, 1939: 323; Neboiss, 1956: 61.

Among species included in the genus *Dicteniophorus* Candèze, *hirticornis* was the only one with a typical vertically raised scutellum. This, as well as the shape of posterior angles of the pronotum, the clothing of bristle-like hairs and the position of dorsal carina indicated its closer relationship to *serricornis*.

Concolorous orange-brown species, the head, antennae, posterior margin of pronotum, scutellum, the underside of the body and legs black. Pronotum and elytra densely covered with short bristle-like hairs. Elytra with sutural carina ending acutely. Scutellum raised vertically, apex as somewhat flattened dome, surface punctate.

The aedeagus very similar to that of *serricornis*, characterized by small triangularly shaped apical hooks on lateral lobes. Female not dissected.

Length 18-21 mm; width 5-6 mm.

Type location: AM.

Type locality: Holotype ♂ Johnstone Riv. Qld. H. W. Brown, labelled "*Dicteniophorus pilosicornis* Cart." an unpublished name which was changed to *hirticornis* in the final manuscript. Paratype ♀ (not ♂ as stated in the description) same locality as holotype.

Specimens examined (5) Queensland: Cairns (Feb.), Kuranda (Nov.).
(AM; BM; NMV).

Distribution: North Queensland.

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PLATE 3

1. *Ophidius elegans* Cand. Stanthorpe, Q.
2. *Ophidius vericulatus* sp. n. Paratype T-4575 Kuranda, Q.
3. *Ophidius dracuncululus* Cand. Mittagong, N.S.W.
4. *Ophidius histrio* (Boisd.). Gosford, N.S.W.
5. *Yalganus serricornis* (Cand.). Queensland.
6. *Yalganus hirticornis* (Carter). Cairns distr., Q.